

BIOTECH BOOMS » PICK A COACH

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Smart COMPANY

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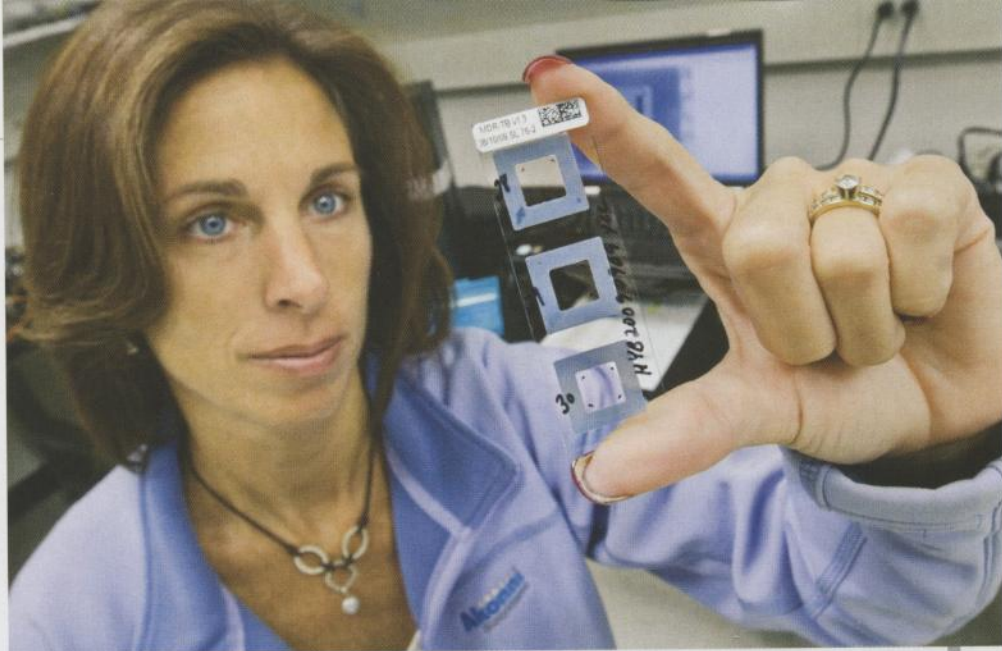
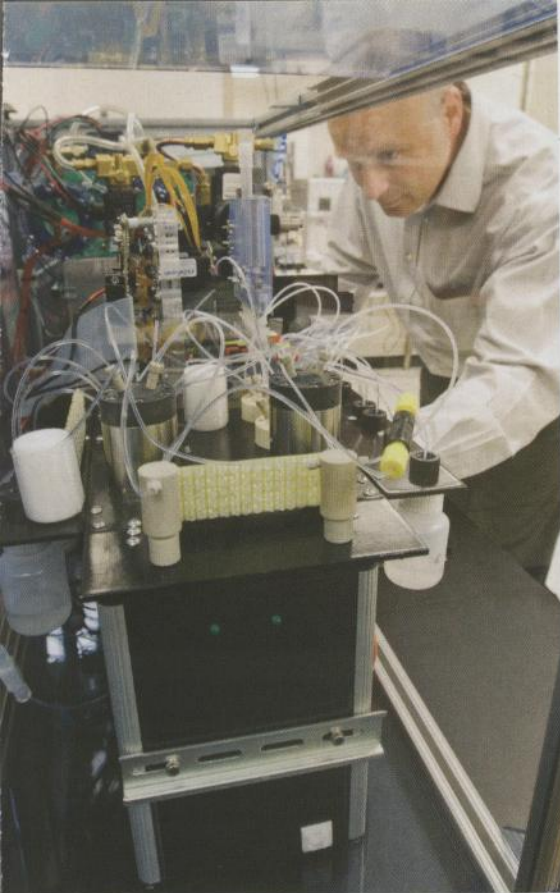


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AKONNI BIOSYSTEMS' Jon Davis (far left) shows a prototype of the next generation Akonni TruDiagnosis® Systems; The Akonni Microarray Reader will read this chip under examination by Akonni scientist Lexi Bryant (above); Senior Scientist Julia Golova (left) performs Oligo synthesis and purification at the Akonni lab.

even branch into pharmaceuticals. But nutraceuticals will likely remain a mainstay. "Probiotics are a growing market," Lin says, "and have demonstrated efficacy in both animal and human models."

Akonni Biosystem's TruDiagnosis® System

The name is said to mean "an attraction to nature's mysteries" in Native American, and Frederick's Akonni Biosystems — a privately held, 7-year-old, molecular diagnostics company whose 2007 revenues of \$4 million were up five-fold over 2006 — is living up to its billing.

Integrating aspects of physics, optics, microbiology, genetics, chemistry, computer science and engineering, Akonni is daily churning out 100 of its multifaceted TruArray® diagnostic chips for the dozen or so researchers who use its patented TruDiagnosis® system.

And this is where the rabbit hole yawns wide again. What Akonni has succeeded in developing — and is working to miniaturize into a \$20,000 portable screening device with a 90-minute sample-to-answers speed at \$40 per test — is a largely automated tool that simultaneously tests a specimen for the genetic (or protein) markers of hundreds of pathogens and/or strains. It then reports

its findings in a few hours — instead of days or weeks — and with a higher-than-standard degree of reliability.

The TruDiagnosis® system stages this micro-"who-done-it" on the surface of its credit-card size TruArray® micro-assay slide, where hundreds of precisely positioned "gel elements" are doped to bond with — and then fluoresce under the system's reader — targeted pathogen markers as they wash over the elements. Often present in imperceptible amounts, these markers are amplified through a

Wonderland-like gene multiplication technique called polymerase chain reaction (PCR). "I'm not aware of any other product out there that is cheap or fast enough to be used as a screening tool for MRSA or other infections at hospital intake," Jon Davis, Akonni vice president for operations, says of the company's scaling plans for its device, which awaits FDA clinical market trials and approval.

It's a market, apparently, in dire need of just such a device. With tuberculosis resurgent in the United States, killing two million people annually worldwide and infecting a third of the global population, a quick, easy, accurate and affordable

diagnostic tool would be a godsend for world wellness.

SABioscience Corp.'s '10 Million Products'

"We have at least four or five products for every gene in the human genome — and for one we actually have 30 products," Dr. Jeffrey Hung, SABioscience's director of marketing, states without batting an eye. "And we're about to release monkey and fruit fly primers," he adds, substantiating his claim that this booming Frederick company (40-percent revenue growth in 2008, 50 percent in 2007) actually markets 10 million products. "So we're talking another 100,000 products."

Ten million offerings from an 11-year-old, 100-employee company — for the research market only! This is definitely "mad hatter-deep" into the rabbit hole, even for an Inc. 5000 honoree with 20 distributors in 50 countries. Unless, of course, one considers the molecular levels that privately held SABiosciences dabbles in and the kind of replication power it wields with PCR (PCR uses primers to function) and other processes. Still, even grasping what this new tenant of a 50,000-square foot facility does at the molecular level —